

THE COST OF BURNING TRASH

HUMAN AND ECOLOGICAL IMPACTS OF INCINERATION IN MINNESOTA

Minnesota (MN) has the third highest number of Municipal Solid Waste (MSW) incinerators in the United States, with seven incinerators. The cost of burning trash in municipal incinerators are significant to human and ecological health, and expensive for community members and municipalities.

VISUALIZING THE COST

EJ Community ●
Non-EJ Community ○

- 1 Polk County Solid Waste Resource Recovery Facility**
(Fosston)
- 2 Perham Resource Recovery Facility**
(Perham)
- 3 Pope/Douglas Waste-to-Energy Facility**
(Alexandria)
- 4 Hennepin Energy Resource Center**
(Minneapolis)
- 5 Xcel Energy - Red Wing Steam Plant**
(Red Wing)
- 6 Olmsted Waste-to-Energy Facility**
(Rochester)
- 7 Xcel Energy - Wilmarth Plant**
(Mankato)



This map shows Minnesota MSW incinerators and their location in environmental justice (EJ) communities (low-income or communities of color disproportionately impacted by environmental burdens and pollution).¹ Incinerators are often located in communities which face cumulative impacts from multiple sources of pollution. In MN, 6 of the 7 MSW incinerators are located in an EJ community, within a three-mile radius.

THE COST TO THE PLANET

Waste incineration releases significant greenhouse gases into the atmosphere contributing to climate change. In 2018, MSW incinerators in the U.S. emitted 11 million tons of carbon dioxide and are nearly as carbon-intensive as burning coal.² Despite these contributions to air and climate pollution, incinerators have tried to re-brand as “waste-to-energy” facilities, and in some states, lobbying has earned renewable energy status and taxpayer-funded subsidies, which helps keep them afloat. This preferential treatment uses money and resources that could be going towards true clean energy like solar and wind.³

In Minnesota, burning MSW is considered a renewable energy source according to their Renewable Portfolio Standard (RPS).⁴ The MN RPS gives incinerators access to renewable energy subsidies funded through taxpayer dollars that contribute to the profitability of this dirty industry. These MN policies must change.

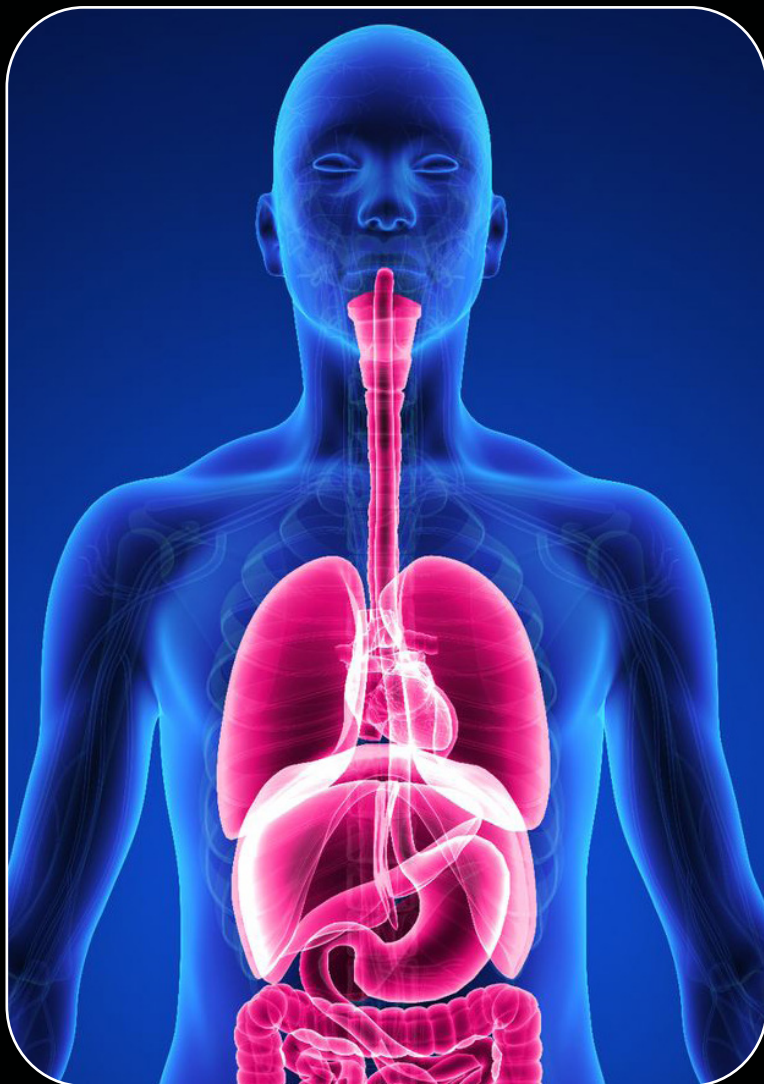
Incineration companies often enter into long-term (up to 30 years) contracts with local municipalities that enforce delivery of a set amount of trash (called a put-or-pay contract) with the threat of a financial penalty for the town if the requirement is not met. Incineration contracts may:

- Lock communities into waste incineration and decades of air pollution and carbon emissions
- Disincentivize the transition to recycling, composting, and zero waste
- Threaten the fiscal stability of communities by incineration industry debt and lawsuits

In spite of serious environmental and health risks associated with burning trash, renewable energy subsidies allow states and localities to promote incineration as an “environmentally-sound” way to manage waste.

THE COST TO HUMAN HEALTH

MSW incinerators are **large emitters of toxic air pollutants** that are detrimental to human health. Burning consumer waste emits many toxins such as heavy metals, dioxins, lead, mercury, nitrogen oxides (NOx), and Particulate Matter (PM). People living close to these facilities are exposed through inhalation or through contaminated food and water. These toxins are linked to a variety of problems including **asthma, heart disease, miscarriage, stillbirth, kidney disease, high blood pressure, and lung disease**. Notably, long-term exposure to PM has been shown to increase the risk of death from **Covid-19**.⁵



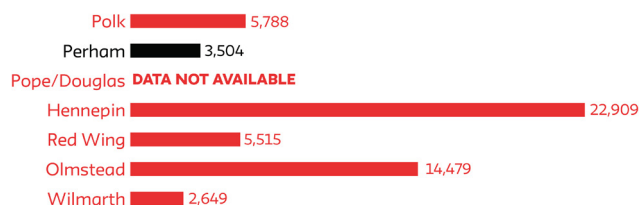
THE COST TO MINNESOTANS' HEALTH

338,454 people live within a three-mile radius of Minnesota's seven incinerators, and are exposed to constant streams of toxic air pollution. Particulate Matter 2.5, lead and mercury are three of the most dangerous pollutants emitted from incinerators. Hennepin Energy Resource Center, in downtown Minneapolis, is the largest MSW incinerator in the state burning 1,200 tons of waste per day and is located beside North Minneapolis where many of the city's Black population has been segregated by decades of discriminatory policies.⁶

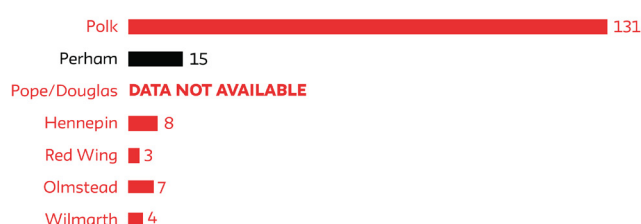
- In 2017, Hennepin was the largest emitter of both PM2.5 and mercury.
- Polk County Resource Recovery emitted the largest amount of lead at 131 lbs. Exposure to lead is particularly worrisome for children and can seriously affect mental and physical development.

AIR POLLUTANT EMISSIONS FOR MN INCINERATORS (2017)

ANNUAL PM 2.5 (LBS)



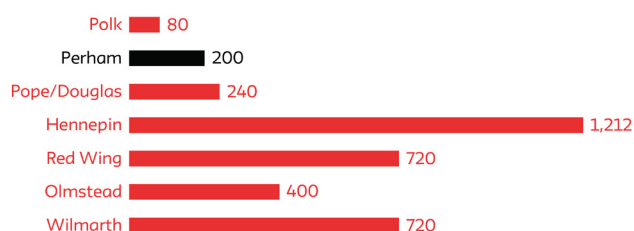
ANNUAL LEAD (LBS)



ANNUAL MERCURY (LBS)



DAILY TONS OF WASTE CAPACITY (LBS)



EJ-Community Non-EJ-Community

THE COST TO MINNESOTANS' WALLET

In addition to paying more for healthcare due to a higher “pollution burden”, residents in MN may also **pay more to have waste burned instead of landfilled**. The U.S. Energy Information Administration reports that burning trash in MSW incinerators is the most expensive way to make energy.⁷

- The average tipping fee in MN to an incinerator is \$83.20/ton compared to an average cost of \$63.52/ton for landfilling waste in the state.⁸
- In 2017, Washington and Ramsey Counties announced a decision to burn all waste, which resulted in a 10% increase for customers' trash bills.⁹
- Both incineration and landfilling are more expensive than zero waste solutions such as reducing waste, recycling, and composting.

JOIN THE FIGHT

HELP ELIMINATE INCINERATION TO PROTECT MINNESOTA'S HEALTH, ENVIRONMENT, AND HARD-EARNED MONEY. ADVOCATE FOR ZERO WASTE SOLUTIONS THAT MINIMIZE MUNICIPAL WASTE STREAMS AND CONSERVE RESOURCES THROUGH RESPONSIBLE PRODUCTION, CONSUMPTION, REUSE AND RECOVERY WITHOUT BURNING:

- End disposal in incinerators and landfills
- Utilize minimum recycled content standards in manufacturing processes
- Invest in infrastructure to recover maximum resources for reuse, recycling and composting
- Ensure community involvement in any state zero waste plan

To learn more, check out GAIA's [Zero Waste Master Plan](#)

Join a Community Group to close MSW incinerators, please contact:
Minnesota BIPOC Environmental & Climate Justice Table at no.incinerators@gmail.com



ENDNOTES

¹ For the purposes of this study, an environmental justice community is defined using thresholds for race, Hispanic origin, and household income derived from the US Census Bureau. To determine the threshold for an EJ community, a review of the statewide average for these socio-demographic characteristics was completed and an EJ community was defined as any census tract where the thresholds for the socio-demographic data was near the state average. In MN, 22% of the population are people of color, including Hispanic origin and 22% of households have income below 200% of the federal poverty level. Based on these averages, any census tract in MN (a) where 20% or more of the residents within a three-mile radius of the plant are people of color [all people who are NOT white/non Hispanic] or (b) 30% or more of the households are at or below 200% of the Federal Poverty Level would be considered an EJ community. The demographic indicators for this project came from EJSCREEN. The source of all demographic data in EJSCREEN comes from American Community Survey five-year summary, compiled yearly. For this project, data from the ACS 2013-2017 5-year estimates was gathered and wrangled for analysis which replicates the demographic variables used in EJSCREEN.

² EPA, "Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2018," (EPA, 2020): 2-3 <https://www.epa.gov/sites/production/files/2020-04/documents/us-ghg-inventory-2020-main-text.pdf>

³ Steven C. Russo et al., Comments of the New York State Department of Environmental Conservation Regarding the Verified Petition of Covanta Energy Corporation, (Albany, New York: New York State Department of Environmental Conservation, 2011).

⁴ DSIRE, Renewable Energy Standard Program Overview: Minnesota, (DSIRE, June 15, 2018) <https://programs.dsireusa.org/system/program/detail/2401>

⁵ Zhaozhong Zhu, Kohei Hasegawa, Baoshan Ma, Michimasa Fujiogi, Carlos A. Camargo, Liming Liang, "Association of asthma and its genetic predisposition with the risk of severe COVID-19" (Journal of Allergy and Clinical Immunology, 2020) <https://www.sciencedirect.com/science/article/pii/S009167492030806X>

⁶ University of Minnesota Libraries, Mapping Prejudice, (Accessed October, 28, 2020) from <https://www.mappingprejudice.org/what-are-covenants/>

⁷ U.S. Energy Information Administration, Updated Capital Cost Estimates for Utility Scale Electricity Generation Plants, (Washington, D.C.: U.S. Energy Information Administration, 2016), 9.

⁸ Tipping fee is the cost that a facility charges for each ton of waste received. Tip fees vary by region and municipality. Average landfill tip fees serve as a proxy for regional waste management prices. States can export waste to landfills out of state in the region which may have different tipping fees from in-state facilities. (Tishman Environment and Design Center, "U.S. Municipal Solid Waste Incinerators: An Industry in Decline," Tishman Center, May, 2019: 69-70 https://static1.squarespace.com/static/5d14dab43967cc000179f3d2/t/5d5c4bea0d59ad00012d220e/1566329840732/CR_GaiaReportFinal_05.21.pdf); and Staley, Kantner, and Choi, Analysis of MSW Landfill Tipping Fees, 1-5.

⁹ Bob Shaw, "Two Minn. counties to burn all trash in incinerators for electricity," (St. Paul Pioneer Press, Dec 28th 2017) <https://www.duluthnewtribune.com/news/4380437-two-minn-counties-burn-all-trash-incinerators-electricity>

This fact sheet was prepared by The Tishman Environment and Design Center in consultation with GAIA and in collaboration with Moja Robison in November 2020.



GAIA is a worldwide alliance of more than 800 grassroots groups, non-governmental organizations, and individuals in over 90 countries whose ultimate vision is a just, toxic-free world without incineration.
www.no-burn.org



Tishman Environment and Design Center

The Tishman Environment and Design Center integrates bold design, policy and social justice approaches to tackle the climate crisis and advance environmental justice.
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